(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 23 June 2005 (23.06.2005)

PCT

(10) International Publication Number WO 2005/057495 A1

(51) International Patent Classification⁷:

G06T 7/00

(21) International Application Number:

PCT/IB2004/052711

- (22) International Filing Date: 8 December 2004 (08.12.2004)
- (25) Filing Language:

English

(26) Publication Language:

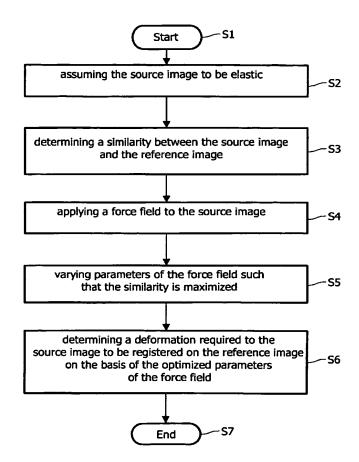
English

- (30) Priority Data:
 - 03104571.9 8 December 2003 (08.12.2003) EP
- (71) Applicant (for DE only): PHILIPS INTELLECTUAL PROPERTY & STANDARDS GMBH [DE/DE]; Steindamm 94, 20099 Hamburg (DE).
- (71) Applicant (for all designated States except DE, US): KONINKLIJKE PHILIPS ELECTRONICS N. V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): PEKAR, Vladimir [RU/DE]; c/o Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE). BYSTROV, Daniel [DE/DE]; c/o Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE). KAUS, Michael [DE/DE]; c/o Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE).
- (74) Agents: MEYER, Michael et al.; Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

[Continued on next page]

(54) Title: ADAPTIVE POINT-BASED ELASTIC IMAGE REGISTRATION



(57) Abstract: The present invention aims at improving the point-based registration elastic paradigm. According to the present invention, a force field, for example, with Gaussian-shaped forces, is applied at several points to the image to be deformed. In this case, no landmark correspondences are required and the optimal positions of the force application point are found automatically, which minimizes the différence between the source and target image. Advantageously, this may allow to control a local influence of individual control points.

WO 2005/057495 A1



PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,

SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.